

29501 - Networks and the Internet

Syllabus Information

Academic year: 2023/24

Subject: 29501 - Networks and the Internet

Faculty / School: 175 - Escuela Universitaria Politécnica de La Almunia

Degree: 625 - Bachelor's Degree in Industrial Processes' Data Engineering

ECTS: 6.0

Year: 1

Semester: Second semester

Subject type: Basic Education

Module:

1. General information

The objective of this subject is to provide the student with knowledge of the basic principles of computer networks, especially those related to the TCP/IP architecture and the link, network, transport and application levels.

These approaches are aligned with the Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (), specifically Goal 9: Industry, innovation and infrastructure, target 9.c.

2. Learning results

- To know the physical principles that support networks, the OSI reference model and the layers it contemplates.
- To know the principles of structured cabling and the elements that compose it.
- To know the concepts of switched ethernet and wireless networks, as well as the protocols and services that make communication on the Internet possible.

3. Syllabus

Contents include:

- Introduction to networks.
- Notions of structured cabling and network elements.
- The OSI reference model.
- Lan and Wan networks.
- Ethernet and IEEE802.X.
- TCP/IP networks, Virtual networks.
- IP addresses, subnetting and routing.
- Network protocols, applications, architectures and services.

Structured in the following modules:

- Unit 1: Computer Networks and Internet.
- Unit 2: Application Layer.
- Unit 3: Transport Layer.
- Unit 4: Network layer.
- Unit 5: Link Layer and Local Area Networks.

4. Academic activities

- Lectures: Sessions with the teacher in which the course syllabus will be explained: 40 hours.
- Practices and workshops: Sessions to solve practical cases presented by the teacher: 14 hours.
- Assessment tests. 6 hours.
- Study and preparation of the subject by the student: 90 hours

5. Assessment system

Mixed system composed of continuous assessment tests and a global assessment test.

I. Continuous assessment tests:

- Written assessment exams: With a percentage of the overall grade of 80% in total.
- Practical work: They will consist of solving proposed problems. The percentage of the overall grade of for all these

works will be 20%.

- In order for the papers and exams to contribute to the final grade, they must have a minimum grade of four out of ten.

II. Global assessment test

- Written assessment exams: It will consist of two parts. A first one that will contain questions on the topics explained at throughout the term, with a weight of 80%; and a second one with questions on the practical work proposed in class, with a weight of 20%.
- In order for both parts to contribute to the final grade, they must have a minimum grade of four out of ten.

In order to pass the subject, students must have a final grade of 5 out of 10, complying with the minimum grades for each of the parts. If this requirement is not met, the maximum grade will be 4.9.